



COMMUNITY GREENING: HOW TO DEVELOP A STRATEGIC ENERGY PLAN

A step-by-step guide for city leaders who want to develop a strategic electricity plan using policies that encourage energy efficiency and use of renewable energy in their community.

How to Use this Information

This guide provides an overview of strategic electricity planning for communities, using a step-by-step approach to develop the plan. This method has a high chance of success, because it is based on stakeholder buy-in and political commitment. Not all communities will need to follow all steps, but the process is designed to incorporate all parties, maximize solution-based thinking, and develop a plan that can be carried out by community leaders.

There are many specific programs and consultancies available to assist in various parts of the planning process. While many are mentioned here, this is neither a comprehensive list nor a specific endorsement of any of the programs. Communities should review their resources and interests when considering the costs and benefits of partnerships with other cities and organizations.

Getting Started

What is a strategic energy plan?

A strategic energy plan is a roadmap to achieving community energy goals in both the near and long term. The goals are determined by stakeholder input, so the plans are inherently local and have stakeholder buy-in, leading to a greater likelihood of success of the plan over time. A strategic energy plan can be part of a greenhouse gas emission plan, a greening plan, or a community master plan.

What does a strategic energy plan look like?

Strategic energy plans can be brief documents used to inform decisions in city and utility planning, or they can be detailed guidebooks with goals, implementation plans, measurement and verification procedures, and reporting requirements (see Step 8 for examples). Plans can also encompass whole communities or just one part, such as municipal buildings.

What are the benefits of strategic energy planning?

- Cost savings and increased comfort for consumers resulting from energy efficiency improvements
- Delayed or cancelled infrastructure development for the community
- Reduced climate change impact from the community

Who provides the funding for strategic energy planning?

Typically, there is no single funding source for a strategic energy plan; but, in some cases, the city or a city agency will lead the process. A time commitment and meeting space are typically provided in kind by invested stakeholders. Several federal agencies offer various forms of support planning, including the

U.S. Department of Energy (DOE), Office of Energy Efficiency and Renewable Energy (EERE) (<http://www.eere.energy.gov/>)

U.S. Department of Housing and Urban Development, Office of Community Planning and Development (<http://www.hud.gov/offices/cpd/>)

When should strategic energy planning begin?

Planning usually begins as a reaction to increasing prices, the potential for large investments in infrastructure development, or a political change. Therefore, it can begin at any time. Sometimes, planning is a reaction to a natural disaster that allows for extensive redevelopment. This topic is specifically covered in an associated publication, “From Tragedy to Triumph—Rebuilding Green Homes after Disaster.” Ideally, the community would have a plan in place before disaster strikes, but that is rarely the case. Because a strategic energy plan can help inform decisions on infrastructure repair and replacement, and lead to the development of more efficient housing, preparing a plan can save communities and constituents money in the near and long term.

How long does it take to plan?

The initial strategic energy planning can take between several months to a year to complete, depending on the objectives and depth of the plan. The benefit of taking these steps is that follow-on policies and programs are checked to reduce duplication and conflicting goals, thereby optimizing public investments in energy programs. In addition, the development process encourages the buy-in of multiple and various groups of stakeholders, increasing the likelihood of success and coordination.

Does this apply to my community?

This guide applies to all cities and communities, regardless of the type of utility serving the area, financial status of the community, or the people within it.

What does this fact sheet cover?

This fact sheet covers strategic planning for the electricity sector, but does not include information on the transportation sector. However, transportation planning is critical to energy use optimization and should be completed in coordination with an electricity plan.

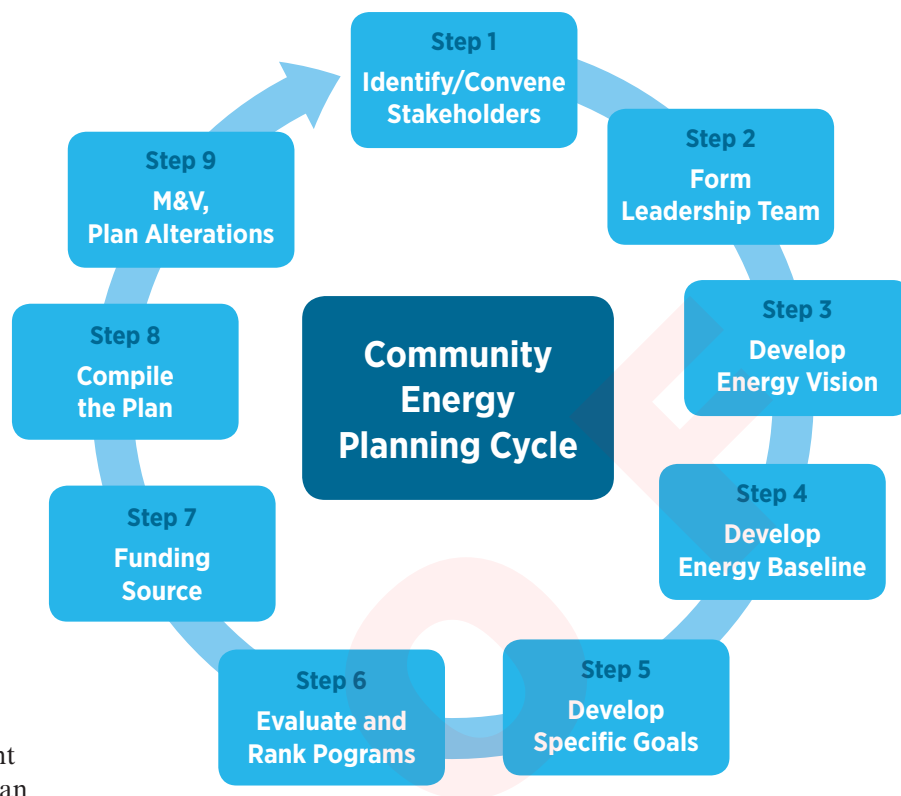


Figure 1: Step Process for Community Strategic Energy Planning Processes

The Strategic Planning Process

Figure 1 shows the basic cycle for community energy optimization planning, also called strategic energy planning. The plan is based on community, city, state, and tribal experience with energy planning. The narrative that follows presents a more detailed look at each step.

The Nine Steps

Step 1: Identify and convene stakeholders.

Step 2: Establish a leadership team.

Step 3: Develop a common energy vision.

Step 4: Develop community energy baseline.

Step 5: Based on the vision and baseline, develop energy goals.

Step 6: Identify and evaluate supply-and-demand policy and program resource options, matching these to the goals and ranking overall program options.

Step 7: Find and secure funding sources.

Step 8. Compile the plan. This includes objectives, goals, baseline, program options and surrounding analysis, and recommended options for policy makers.

Step 9: Measure and evaluate—altering plan. Is there a current plan for evaluation of programs? How high is the demand for that as a formal document or announcement? How will the results be communicated back to the individual program implementers?



Step 1 example: How'd they do it in New York?

In December 2006, New York Mayor and Energy Planning Champion Michael R. Bloomberg called for ideas to achieve 10 key goals for the city's sustainable future. The following four-month outreach strategy included city meetings with more than 100 advocacy organizations, 11 neighborhood leader and town hall meetings throughout the five boroughs, and presentation of the ideas for feedback to 50 local organizations. The city received more than 3,000 emails with suggestions for the program. This extensive outreach effort promoted the program and provided useful insights into the needs and wants of the constituents the program would eventually serve. This also supported more buy-in later in the program.

The result is the most sweeping plan to enhance New York's urban environment in the city's modern history. Focusing on the five key dimensions of the city's environment—land, air, water, energy, and transportation—we have developed a plan that can become a model for cities in the 21st century. For more information on PlaNYC, see <http://www.nyc.gov/html/planyc2030/html/home/home.shtml>

Step 1. Identify and convene stakeholders

A critical step to a successful energy plan is the inclusion of critical stakeholders. For an energy plan, this includes anyone who generates, controls the sale of, sells, or uses electricity and gas.

- **Utility/utilities.** Utility involvement in the process is important because the utility has the most access to the customer (the consumer), as well as institutional memory and unique knowledge of the energy system's opportunity and limitations. In addition, utility buy-in to changes to the status quo is invaluable to implementation effectiveness.
- **Government: City Council, Mayor's Office, decision-making representation from multiple agencies.** Leadership representation and support from city leaders provides confidence in the process, increases participation interest, and can improve quality implementation. In the end, the agencies are the locations where the plan will be carried out, so participation, understanding, and buy-in to the process is critical.
- **Community businesses and industry.** The community business and industry energy users often have constraints that must be considered to maintain and grow economic development through a strategic energy plan.
- **Nongovernmental organizations (NGOs).** Local NGOs have institutional memory and provide insight into the interests of resident groups.
- **Residents.** Individual residents should be welcome at the discussion table, while recognizing that organizations that represent more than individuals are likely to have a more powerful voice. Input and reactions from residents can be very useful in identifying potential implementation challenges.
- **Champion.** In cities with successful plans, the existence of a persistent "champion" was critical to plan development. Champions can be assigned if the person is passionate about the process and its success. Champions can also emerge as the process develops.

Caution! When identifying stakeholders, having a balanced representation is critical to success. Ensure that both extreme and moderate viewpoints are represented on your group to get the most representative outcome.

Step 2. Establish a leadership team

In most cases, there will be a lot of interested stakeholders with valuable opinions. It will be necessary to choose a leadership team that has the power to make decisions, direct the funding resources, and promote the project throughout the process. Typically, this leadership team is set up at the mayoral committee level and made up of multiple city agencies that will have a role in plan development. If possible, selecting a few active advocates may lend transparency to the process, encourage buy-in, and expand the realm of ideas incorporated into the plan. If funding is available, hiring a full- or part-time coordinator to organize and keep the process going is an ideal start for establishing a leadership team. If not, a few active volunteers can fill this position, but one should be clearly charged with leadership.

Step 3. Develop a common energy objective and vision

Now that the stakeholders are gathered, what should they be talking about? Setting an overall objective and establishing buy-in is a potential first meeting topic. Energy optimization has many benefits for cities and communities. Identifying the top priorities for specific stakeholders can help develop a vision, as well as narrow the types of programs that will fit the city needs. Some examples of objectives are:

- Increase and ensure energy reliability
- Optimize infrastructure redevelopment costs

- Minimize environmental impacts
- Diversify supply
- Use local resources
- Strengthen economic development
- Build a “green collar” workforce
- Ensure ratepayer energy affordability

Energy efficiency and renewable energy can meet multiple goals, so there is no reason to choose only one goal. However, establishing primary goals will help determine the best programs to meet those goals later on. It is crucial that stakeholders define the scope of their plan in this step. For example, some municipalities choose to focus on addressing municipal energy issues first, later expanding the plan to incorporate community-wide goals. Ensuring that all of the stakeholders understand the goals of the process is time well-spent at this stage of the process.

A common vision is developed with all stakeholders to ensure a unified effort. Well-designed statements are a short and broad sentence or set of sentences that can guide an overall process, but not get caught up in details. Here are some examples:

- New York City: Assuring reliable, affordable, and clean electricity is essential to the continued attraction and retention of [New York] businesses and residents.
- Toronto, Canada: Reduce climate change impact, become the renewable energy capital of Canada



Step 2 example: How'd they do it in New Orleans?

During the recovery following Hurricane Katrina, the City Council of New Orleans asked an interested resident to form a task force that would develop an energy plan. For two subsequent years, the Energy Policy Task Force loosely self-organized and met multiple times on different subjects to develop a comprehensive energy efficiency and renewable energy plan for the city. There were more than 50 consistent volunteer participants, including private industry, public advocacy groups, and interested residents. The group broke into eight committees covering all aspects of energy efficiency and generation options, and each committee was headed by a committee chair. Committee chairs met with the leadership committee and made final changes to the community energy policy recommendations document later called the “Energy Hawk,” which was submitted to the City Council for consideration. The report led to the eventual implementation of a city-wide energy efficiency program called Energy Smart New Orleans. This program includes energy audits; incentives for energy-efficient retrofits separately tailored for residential, commercial, and industrial customers; low-income weatherization; pilot programs for solar water heating and photovoltaics (PV); and public awareness and education.

There were many lessons learned through this process. Among the most significant were the importance of having involvement from a clear utility champion, cross-agency representation, and specific goals for the program to achieve. If these elements had been achieved early, it may have been possible to move the process more quickly.



Step 4 example: Creating an Energy Baseline in Portland, Connecticut

Portland, Connecticut, is pursuing a community energy plan pursuant to a 2004 Board of Selectmen Resolution to reach a goal of 20% Clean Energy by 2010. Due to the timeline, the community took two approaches—auditing select buildings within the jurisdiction initially (e.g., schools), and later joining the EPA Community Energy Challenge to commence auditing the harder-to-reach facilities, such as those that are privately owned. In this way, the community was able to make immediate progress to report to the community and begin accumulating the savings resulting from energy efficiency, maximize the momentum of the early movement, and continue on in the mid-term with the harder-to-reach buildings. As a result, there is no single document that outlines the energy savings potential for the whole town, but there are many documents describing the potential in different sectors. For more information on Portland's efforts, see <http://portlandct.org/portland/cleanenergy.htm>.

Step 4. Develop a community energy baseline

The stakeholders, or a subgroup, need to establish/oversee the development of a community energy baseline. This includes all relevant sectors and serves as a starting point for all analysis, as well as identifies the largest energy users and potential program and policy targets. Understanding energy use at the community level helps to clarify which programs and projects will fit the needs of the city. The baseline is critical because it helps design cost/benefit rankings for potential programs. Without it, there is no way to determine which programs are the most cost-effective for a specific community. The level of detail can range from an overview provided in a utility annual report, to a more detailed sector or subsector review, depending on the availability of information and budget to collect the information. The more detailed the baseline, the more detailed the program design and impact information will be. It is important that, during this process, the methodology for measuring the baseline is clearly defined so that future measurements can verify the effectiveness of policy implementation. While you can develop a baseline for your community in generalities or from utility use information, if available, there are organizations that can support the development of parts of a community energy baseline. These groups include the EPA's Portfolio Manager, which can help benchmark all of the community's nonresidential buildings (http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfolioportfolio). Communities can also join the Community Energy Challenge (<http://www.epa.gov/NE/eco/energy/energy-challenge.html>) and receive technical assistance using EPA's benchmarking and planning tools.

Step 5. Based on the vision and baseline, develop specific energy goals

This step is defined by an event or a sequence of events. It can include a facilitated session where stakeholders present overviews of the best ideas they have for inclusion in the plan. For example, development of a systems benefit charge to fund efficiency programs or information programs for residents. The group does not have to use a paid facilitator, just someone with the skill set. Often, a general community goal is the start of a process. For example, a Mayoral Order that the community reduce energy use by a certain amount in the next 10 years. Once a stakeholder process is underway, this goal can be broken down into more community-driven specifics. For example, how much of that goal will be met with energy efficiency, how much from renewable energy? How much will come from municipal sources and how much will be promoted in the private sector? Answering these questions provides more insight into community wants and needs and increases the effectiveness of the overall program.

This process can take months and a good amount of stakeholder effort; or it can happen at a planning meeting over a few days with a good facilitator. A champion is a great asset for moving the process along and making sure all voices are heard. At this point, funding the project is not a critical part of the brainstorming (although stakeholders are always welcome to suggest ideas for funding programs), instead ideas should be freely flowing to maximize creativity and applicability to the specific community. These ideas will be ranked by cost effectiveness in following steps.



Step 5 information:

Where to get help in facilitation and planning.

There are a wide range of organizations that support efforts with program and policy suggestions, as well as examples and lessons learned from other localities, including:

U.S. Environmental Protection Agency Clean Energy Local Programs Best Practices:
<http://www.epa.gov/cleanenergy/energy-programs/state-and-local/local-best-practices.html>

U.S. Department of Energy, Energy Efficiency and Renewable Energy Office, Weatherization and Intergovernmental Program's Technical Assistance Program Resource Toolkit: http://apps1.eere.energy.gov/wip/policy_options.cfm

American Planning Association Database of Programs:
<http://www.planning.org/research/energy/database>

Community Energy Opportunity Finder:
<http://www.energyfinder.org>

National Action Plan for Energy Efficiency:
<http://www.epa.gov/cleanenergy/energy-programs/napee/index.html>

Energy Efficiency Program Best Practices (comparison and review are categorized and reviewed through this PG&E/iTron consulting report:
http://www.eebestpractices.com/pdf/Portfolio_BP_Report.pdf

Step 6. Identify and evaluate supply-and-demand policy and program resource options, matching these to the goals and ranking overall program options

Using the baseline and the program and project ideas, develop a ranking system to understand cost-effectiveness of different programs. This part of the process requires a strong leader to ensure that

- all the information for the proposed programs is available from the proposing entities,
- that the same methodology is used to evaluate each program, and
- that draft results are reviewed by the program proposers to ensure that all the correct program aspects are considered.

There are many methods for evaluating cost-effectiveness, and the one that is most appropriate depends largely on program goals. The total resource cost (TRC) test is most commonly used because it considers a wide range of life-cycle benefits for policies and programs. It is considered a best practice by the National Action Plan for Energy Efficiency (NAPEE). A methodology for how it was applied in California is found here: http://www.apscservices.info/EEInfo/CA_Stndrd_Prac_Man.pdf

If you do not have access to the appropriate expertise to conduct these tests, consider tailoring the questions to be applicable to the DOE EERE/WIP Technical Assistance Program, which can answer questions regarding program impact (<http://apps1.eere.energy.gov/wip/tap.cfm>)

Step 7. Identify and secure funding sources

In this step, financial support is secured for the programs being proposed. Typically, energy efficiency and renewable energy programs are funded through a ratepayer charge called a public benefits charge (PBC) or systems benefit charge (SBC). However, it can be challenging to enact a PBC because it initially increases rates; or the community may not have jurisdiction over rate issues. Alternative funding options include committed city budget support or grant and loan support from external sources.

It is possible that there will not be a source of immediate funding for implementing the energy plan. In that case, free programs and partnerships (or those that provide their own funding) are the priority. Some proposed programs, for example, may be self-funding over time or after an initial investment. When a funding mechanism is identified, additional programs can be implemented.

Step 8. Complete the strategic energy plan.

The strategic energy plan is a document that summarizes the process, consolidates the information gathered, and makes it publicly available. It can be used in a variety of ways. Once it is accepted by the Mayor's Office or City Council (which should go relatively smoothly if the process has been inclusive), it serves as a guidance document for policy- and decision-making processes. For example, it can be an overview with a summary of gathered information for current and future program development, or a baseline that programs developed in the city need to follow when issuing orders. Finally, many cities use this type of document to promote programmatic successes and illustrate the usefulness of funding the program to the public. The strategic energy plan should also include a schedule for reporting progress and reviewing the overall program to ensure it's working (Step 9). This is the most challenging and ongoing part of the process. Once projects and programs are identified, the group must select stakeholders to implement them. Assignments are frequently based on current activities, and led by official employees of the administering organization (often, government agencies). For example, a mayor's office

with jurisdiction would champion a retrofitting of public buildings activity. This is also the appropriate step for incorporating the energy plan into the other development plans (e.g., master, greenhouse gas reduction) at the community level. The process will be smoother if coordinated with those documents throughout.

Step 9. Evaluate and fine tune!

Measurement and verification can be applied at the project level to determine energy savings, and at the program level to determine the overall effectiveness of your energy plan. Evaluate the effectiveness of the plan and its components on a regular basis so the plan can be altered, if necessary, to ensure the best results. Ensure continued success through periodic stakeholder catch-up meetings and reviews. In many communities, a central Web site is used to track current activities and monitor progress. In some strategic energy plans, the primary implementer (e.g., Mayor's Office or City Council) is required to provide a periodic progress report to the public. Examples of evaluation methods can be found at www.epa.gov/cleanenergy/energy-programs/state-and-local/evaluating.html.



Step 7 example:

A tale of two cities—Boulder, Colorado, and New Orleans, Louisiana

In 2006, Boulder, Colorado, became the first city in the nation in which the public voted to implement a carbon tax. This tax, a little more than a dollar a month for residences, is collected by the utility and used to fund home and business energy audits and other energy saving programs.¹ In the Energy Smart New Orleans Planning process, funding was a major barrier to implementation. There were many concerns at increasing ratepayer costs, especially if they disproportionately charged low-income constituents or commercial businesses. After attempting many different solutions, such as federal and state funding and taxes, in March 2009, a utility rate case closed with the result of both a rate decrease (as a result of utility overcharge from the 2006 rate case) in coordination with a utility allocation of \$3.1 million annually to support the efficiency programs outlined in 2008's Energy Smart program.²

These two cities, with very different priorities, came to funding mechanisms in very different ways—both with solutions.

¹ <http://www.msnbc.msn.com/id/15651688/>

² <http://www.all4energy.org/news/funding-energy-smart-rate-decrease-included-agreement-entergy-new-orleans-rate-case>



Step 8: Examples of plans

As noted in the introduction, energy plans come in all shapes and sizes. Many cities follow pre-established guidelines such as ICLEI or the U.S. Conference of Mayors to gain from the experience of other cities and optimize resources. Here are some examples based on community size:

San Jose, California (population just under 1 million)
http://www.sanjoseca.gov/esd/natural-energy-resources/PDFs/2009StrategicEnergyPlan_DRAFT_3-23-09.pdf.

Tulsa, Oklahoma (population of 384,000)
<http://www.cityoftulsa.org/COTlegacy/documents/CityofTulsaEnergyConservation-andEfficiencyPlan.pdf>

Irvine, California (population of 213,000)
http://www.cityofirvine.us/files/2008_June_24_Energy_Plan_FINAL.pdf.

Pleasanton, California (population of 66,000)
<http://www.ci.pleasanton.ca.us/pdf/energyplan020312.pdf>.

Burlington, Vermont (population of 39,000)
http://www.ci.burlington.vt.us/planning/mdp/2006/mdp_2006_energy.pdf

Gunnison, Colorado (population of 5,000)
http://www.cityofgunnison-co.gov/council/epackets/packet_05.18.09_05.19.09/draft_energy_action_plan.pdf

Who Can Help?

What organizations can assist in planning?

The U.S. Department of Energy, Energy Efficiency and Renewable Energy Office's Weatherization and Inter-governmental Program offers information resources (<http://apps1.eere.energy.gov/wip/>), financial assistance through formula and competitive grants (<http://apps1.eere.energy.gov/wip/financial.cfm>), and free expert technical assistance through the WIP Technical Assistance Program (TAP) program (<http://apps1.eere.energy.gov/wip/tap.cfm>).

The American Planning Association (<http://www.planning.org>) is a membership-based organization that offers a database of resources on community planning and individual policies (<http://www.planning.org/research/energy/database>), as well as access to planning experts nationwide.

Community Planning (UK) (<http://www.community-planning.net>) focuses on providing listings and check-lists for planning in the United Kingdom, as well as recommendations on best practices throughout the development and implementation processes.

ICLEI Local Governments for Sustainability (www.iclei.org) is an association of cities and communities that have committed to sustainability.

The U.S. Department of Housing and Urban Development, Office of Community Planning and Development (<http://www.hud.gov/offices/cpd/>) offers resources in this area.

Post Carbon Cities (<http://postcarboncities.net/>) provides a guidebook for localities to address peak oil (primarily the transportation sector), as well as strategies for implementing the plans.

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